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ABSTRACT

The continuing inability of measures of personality to predict communicative or other types of behaviors has forced researchers to seek alternative ways of measuring. One alternative consists of a measure of four types of causal attribution in hypothetically crucial situations in five types of relationships of humans. The type of relationship in which communication occurs is assumed to indicate one particular causal perspective as most appropriate. An experiment was conducted to test the validity of the structure as measured and, of 12 predictions, 11 were statistically confirmed. A subsequent experiment was run to test the ability of the instrument to predict performance in four different types of communicative relationships from a knowledge of the causal perspective assumed to be the most appropriate for each. Of 11 predictors, 9 were statistically confirmed. (The evaluation instrument is appended.) (Author/MM)

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Causality Perspectives as Predictors of Communication Effectiveness

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ABSTRACT: The continuing inability of measures of personality to predict communicative or other types of behaviors has forced researchers to seek alternative ways of measuring. An alternative is presented, consisting of a measure of four types of causal attribution in hypothetically crucial situations in five types of relationships of humans. The type of relationship in which communication occurs is assumed to indicate one particular causal perspective as most appropriate. An experiment was run to test the validity of the structure as measured and, of 12 predictions, 11 were statistically confirmed. A subsequent experiment was run to test the ability of the instrument to predict performance in four different types of communicative relationships from a knowledge of the causal perspective assumed to be the most appropriate for each and, of 11 predictions, 9 were statistically confirmed.

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Causality Perspectives as Predictors of Communication Effectiveness

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Traits as predictors of performance

More than half a century of research to find differences among individuals on common traits that are predictive of their performance has yielded a barrenness perhaps more vast and well-sustained than can be found in any other science within that timespan. If that long-lived but almost fruitless enterprise were related to the parable of Andersen (1959), it could be said that the Emperor's nakedness (of measures of personhood as predictors of performance) was proclaimed by Mischel (1968). With that manifesting of nakedness, Andersen's tale comes to an end. But we are still living through the sequel to that story with an Emperor still naked.

Some researchers have recommended that the Emperor acquire an entire wardrobe (a personality for each occasion) such as the situationists (Bowers, 1973; Bem & Funder, 1978), whereas others have opted to retailor some of the Emperor's old castoffs (to use old measures in new ways) such as the interactionists (Buss, 1977; Magnusson & Endler, 1977) and the methodologists (McGowan & Gormly, 1976; Mischel, 1979; Stephenson, 1980; Lamiell, 1981).

In terms of ways of measuring any trait, the need is to abandon the attempt to measure such that there is one score per individual as a predictor of performance in any situation, and to measure such that there is a set of scores per individual for any trait, with one score from the set being

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the best predictor for a particular situation. The need then is to discover that overarching consistency of personhood which enables the scores within the set to relate meaningfully to one another.

This research reverses that sequence by creating a structure such that the measure yields a set of scores that are meaningfully related to one another, and the nature of the structure indicates which scores from the set are the best predictors for a particular situation.

A typology of human relationships

What is generally referred to in personality research as a typology of situations is defined here as a typology of relationships. The former term tends to suggest different environments which are inhabited by the same person; the latter term is intended to refer to the human as a component in each relationship such that the human can manifest personhood only in certain ways that are unique to a relationship of that kind.

Types of relationships of humans are assumed to differ essentially in terms of the nature of the goal or purpose to be attained. A goal is attainable within a relatively short time, and the successful goaling relationship concludes by the goal being achieved at some acceptable level at some real point in space-time. The alternative is failure, either by the coursing being terminated prematurely or by its concluding at some non-acceptable level. A purpose is not attainable at some point in space-time. A purposing relationship is succeeding so long as the relationship is sustained (and is not, therefore, a relationship that fails) and the coursing is maintained within the parameters that are defined (and

is not, therefore, a relationship that is failing).

A goal or purpose of a relationship is not defined in terms of information provided by any human component of it. The teleon (to coin a word for pupose and/or goal) of a relationship is defined as determinable from an analysis of the data which the coursing of that relationship can provide. To use an analogy of missle-firing, an authority such as the range officer may specify authoritatively what target for a missle is intended, but data about the trajectory of that missle are better able to specify the precise path and point of impact. Epistemologically, then, telea (purposes and/or goals) are defined as determinable from a data-base, and humans in relationships can determine the nature of those relationships from data about the coursing of them.

With relationships thus defined, one type of such relationship is a cognitive monadic relationship. A cognitive monad, or C-monad, can be the relationship between internal functions, such as between physiological functioning at the conscious level and phsysiological functioning at the unconscious level (Rorty, 1979). Or it could be the relationship between internal structures, such as the intercranial hemispheres coupled directly through the corpus callossum and indirectly via lower portions of the CNS (Russell, 1979). That a cognitive monadic relationship maintains within the human is generally unquestioned, and the thrust of research is generally directed towards a better understanding of the nature of it.

The other type of monadic relationship is a behavioral monadic relationship. A behavioral monad, or B-monad, is a relationship between the individual human as one component and that human's external environment

as the other. Whereas the teleon of a C-monad is a change in or a controlling of a cognition, cognitive structure, or both, the teleon of a B-monad is a change in or a controlling of a behavior, an environment, or both. External devices such as notes, computers, flowcharts, etc. may be added to a C-monad, but the relationship remains cognitive so long as the teleon is conceptual in nature. Similarly, an individual's behaviors can be monitored by a computer or by a human serving as such, or even be governed by the behaver's cognitive plan of action, but the relationship remains behavioral so long as the teleon is physical in nature.

One human can have a dyadic relationship with another such that the teleon of one is related to but is not the same as the teleon of the other. The telea of the two must be related to yield one dyadic relationship rather than two monadic relationships. Two related telea can be related either complementally or antithetically in the sense that a tendency towards the attaining of one of the two telea fosters (in the complemental case) or inhibits (in the antithetical case) the attaining of the other.

Given such a duality of related telea, society is not likely to value the two equally. To do so is to sanction the relationship of feuding monads who are apt to violate social laws in each struggling to subordinate the other. Similarly, any two humans with complementary or antithetical telea are likely to agree on a higher priority for one than for the other as their only dyadic way to attain some extent of both (a relationship of verbal force) rather than for each to strive to achieve the teleon monadically (a relationship of physical force).

Given a dyad in which the teleon of one member is both socially sanctioned and mutually understood as having precedence over the teleon of the other, the relationship in which that dyad courses towards the teleon of the superordinate is defined as a superordinate dyadic relationship, or sup-dyad, and towards the teleon of the subordinate as a sub-dyad. The two dyads function concurrently, as do any two frequencies related such that one is an integral multiple of the other, either by addition if they are in phase (a complementary relationship) or by subtraction if they are out of phase (an antitthetical relationship).

To take but one of countless examples, if the superordinate's purpose is to increase the productivity of the subordinate, and the subordinate's purpose is to remain on the payroll, a dyadic goaling relationship is likely to be formed in which the superordinate strives to achieve the goal of specifying to the subordinate ways of increasing productivity, and the subordinate's goal is to endure that encounter. If the subordinate leaves before the superordinate perceives that the sup-dyad is a success, both dyads will terminate without success. If the subordinate remains and manifests enough attentiveness for the superordinate to perceive success, both dyads achieve success. The relationship, therefore, is complementary. More generally, then, sup- and sub-dyad are complementary if success implies success and failure implies failure, and they are antithetical if success for one implies failure for the other.

The fifth type of relationship is a dyadic relationship in which there is one and only one teleon to be attained. Whereas the telea of the sup- and sub-dyad are contingent upon each other, in this fifth type there is but one

teleon to be attained. As in the other dyadic relationships, neither member of this fifth type may be aware of the nature of their teleon nor of the nature of their coursing to attain it, although each member may have had, upon entering the relationship, some intent (the individual's teleon of which the individual is aware) assumed to be attainable within that relationship being entered. This fifth type of relationship with a single teleon jointly pursued is a communication dyad, or com-dyad.[1]

Two humans pulling jointly on a rope are two B-monads since the teleon is one of physical force, regardless of the remarks required for task completion. More importantly, for illustration, a stress gauge could be placed between the rope and the hands of each person to measure the individual contribution of each to the amount of total work performed. This meaningful apportioning of teleal attainment to each of the members of the previous four types of relationships is not an attribute of com-dyads. To claim that the salinity of a molecule of salt is equally attributable to its sodium and its chlorine atoms because there is one of each requires that one ignore totally the fact that neither has any salinity independently of the other. Two units must lose their identity as units to become fused as one. Otherwise, one plus one can never equal one. And so long as there is a com-dyad, there cannot be two individuals or two persons in it, although such entities may enter it and leave it.

Given each of these five types of relationships, General Systems Theory (GST) classifies (Maruyama, 1960, 1963) each type in terms of the

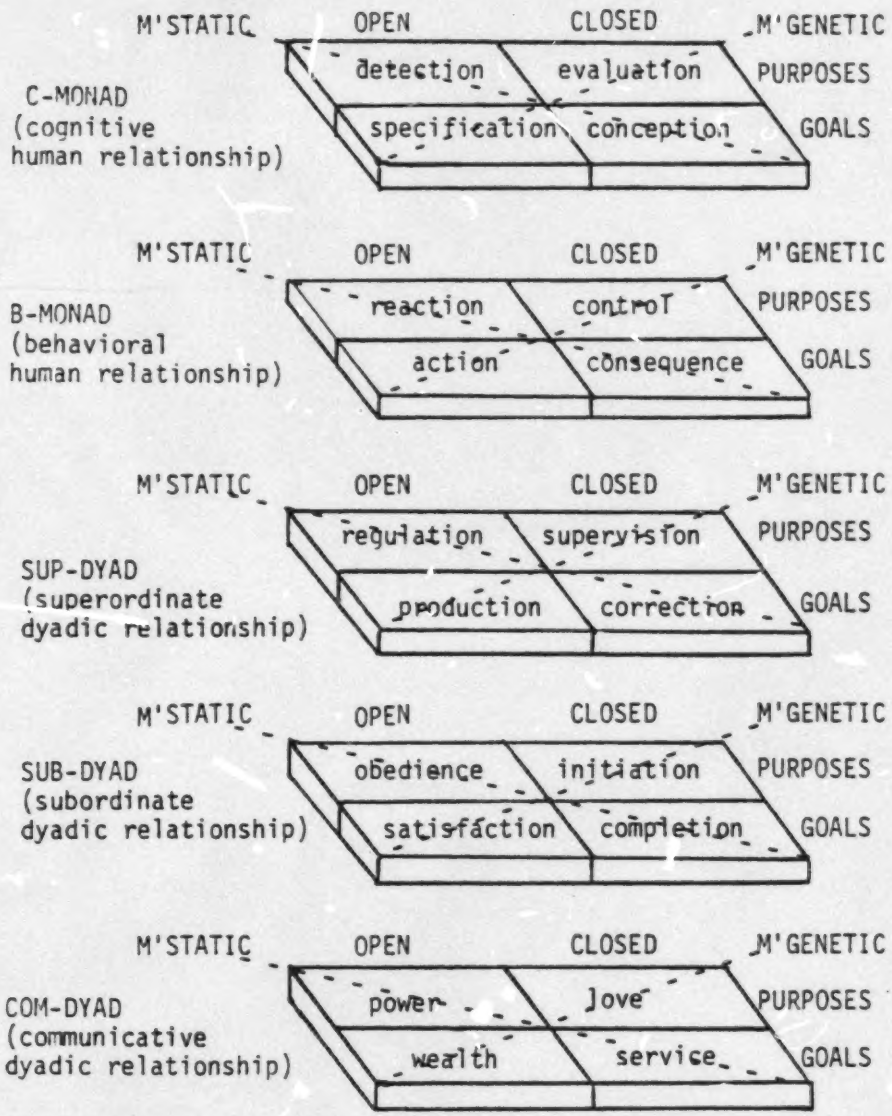
nature of its coursing as either morphostatic (deviation-suppressing) or morphogenetic (deviation-amplifying). GST (Bertalanffy, 1968) also enables each relationship to be classified as to whether, within the timeframe in which the relationship is being considered, exogenous variables do or do not significantly influence its coursing, with such relationships being termed, respectively, open or closed.

If a 2x2 matrix is created in which the diagonals are the morphostatic/morphogenetic dimension and the columns are the open/closed dimension, Figure 1 displays the four cells of that matrix for each of the five types of relationships of humans. It can be seen that, with the diagonals and columns thus defined, the rows of each matrix are what have been referred to heretofore as the teleal dimension, with purposes being the process-referenced relationships and goals being the end-referenced relationships.

A suggested label is provided for each of the 20 states (4 states of each of the 5 types of relationships). Each label was selected for its ability to serve: (1) as a descriptor of that particular state, (2) as an antonym of the other term in that same row and in that same column, and (3) as a synonym for that same cell in each of the other 4 types of relationships. These labels are provided merely to exemplify the nature of each state, and none of these terms will be subsequently employed.

Figure 1

A Typology of Human Relationships



A typology of causal attributions

The need, then, is to discover a covering structure of personhood which tends to predict persons' tendencies to enter into relationships of certain types instead of others, and to perform as components in certain states of entered relationships longer than in others.

Three dimensions of personhood which have recently manifest some potential in those regards are the dimensions of learned helplessness, locus of control, and causal attribution.

Locus of control research tends to focus on perseverance, the ability of some persons to attempt to control their environments without manifest reward longer than do others. Locus of control refers to the general tendency to perceive rewards as contingent (an external locus) or as non-contingent (an internal locus) upon one's own behaviors (Rotter, 1966). Mischel (1973, 1974) found, for example, that young children's extent of perceiving themselves as having control over favorable events was related to their persistence in achieving favorable outcomes, and their extent of perceiving themselves as having control over unfavorable events was related to their persistence in avoiding unfavorable outcomes.

Learned helplessness research tends to focus on submission, the tendency of organisms, when subjected to a punishing environment which they cannot control, to cease attempting to control that environment when it subsequently becomes amenable to their control. Seligman, Maier, and Geer (1968) found that harnessed dogs who suffered unavoidable shock would not try to escape when the harness was removed and the shock was resumed. Later researchers such as Dweck (1975) related this learned helplessness in children to their causal attributions. When children defined as being

in a state of learned helplessness in the classroom were taught that their unfavorable outcomes in programmed learning were attributable to lack of effort rather than to an innate deficiency in their ability, they achieved more favorable outcomes than did controls.

Causal attribution research tends to focus on rationales, how one accounts for failures and successes. Weiner et al (1972) found that test-takers tended to account for their receiving grades higher or lower than expected in terms of causes of four types: effort, ability, task difficulty, or (least often) luck. Lefcourt (1973) interprets this disfavoring of luck by stating that "the sense of control, the illusion that one can exercise personal choice, has a definite and positive role in sustaining life." Later findings (Langer & Roth, 1975; Harvey et al, 1978) confirmed and expanded upon this need to feel as if one is free to choose, to feel as if one is not obedient to chance. Langer (1977) concluded that luck is the individual's illusion of control over outcomes entirely due to chance.

Several studies have examined relationships among these three dimensions, such as the two examples mentioned (Dweck, 1975; Mischel, 1974) and the more recent research of Fyans and Maehr (1979) in which attributional style is related to selection of tasks that require ability, effort, or luck.

In terms of the structure displayed in Figure 1, it might be said that two of the three dimensions--locus of control and learned helplessness--inhere in the structure in that the morphogenetic cells typify internal control of, or an absence of learned helplessness in,

each type of relationship, whereas the morphostatic cells typify external control of, or learned helplessness in, each type of relationship. Neither dimension, nor both together, seem able to differentiate between the two cells on either of the diagonals, by providing information on the teleal or the open/closed axes. The two dimensions seem to differ in terms of endurance in any state being predicted better from the dimension of learned helplessness if that state is unremittently punishing, and endurance in that state being predicted better from the dimension of locus of control if that state is intermittently rewarding.

But causal attribution does provide information on all three axes. Weiner et al (1972) defined the four causes (ability, effort, task difficulty, and luck) as the first two being "stable" and the last two being "unstable," and the first and last being "external" and the middle two being "internal."

It was decided, therefore, to employ that structure of causality as the best available candidate for a covering structure for the structure of relationships shown in Figure 1. However, since the four labels for those causalities tend to focus more on the C-monadic type of relationship of test-taking from which they were derived than, preferably, to a relationship of no particular type, more comprehensive labels were employed.

It was further decided to specify causal attribution only in <u>crucial</u> situations. A crucial situation presents a moment of crisis, a point in space-time at which the decision about the causes of that crisis can provoke one to consider exiting from that state of that relationship to another state or to a relationship of another type.

When a crucial situation occurs, it is possible to attribute its occurrence to chance. To attribute it to chance-causality is to assume that anything which can occur eventually will do so. A believer in chance-causality tends to ignore the fact that the crucial situation has already occurred and tends to focus instead on its likelihood of happening eventually to anyone. From this perspective, one accounts for the sudden advent of, say, a Beethoven by assuming that, with thousands of persons writing music for centuries, at least one composer at the level of a Beethoven should eventually be produced. Langer (1977) concludes from extant research that humans tend to view events as under their control when the situations manifest some of the trappings of situations requiring skill (e.g., choice, passive or active participation, competition, etc.). To state the converse for the present case, humans tend to view events as due to chance when those situations manifest some of the trappings of situations controlled by chance (e.g., consistently wrong predictions, a few small wins and many larger losses, events that are inexplicable in terms of any "just world" notion, a distancing of consequences from behaviors, etc.).

It is also possible, when a crucial situation occurs, to attribute it to whatever is known to be different which has occurred within the lifetime of those affected by it. That situation here at time one is seen as having been provoked by some intervention which has occurred at some time zero in the past. The intervention may have been intentional or serendipitous, but in either case it now can be repeated. This push from an intervention--one made consciously or discovered in retrospect to have occurred at some identifiable time zero, or even inferred to have occurred at some unknown

time heretofore--is referred to as push-causality. Brickman et al (1982) refer to a model of helping in which clients are believed to need treatment (intervention) as the "medical model." To restate their medical model from the shared perspective of clients and helpers rather than merely from the latter, in our culture people tend to seek physicians when they have suffered what they perceive to be a considerable deviation from what to them is their normal state of wellness, and that perception of sudden change from person-into-patient is reinforced by the physician's diagnosis (of prior intervention) and the remedy (of counter-intervention), with the prior intervention occurring at time zero, the diagnosing at time one, and the treatment beginning at a new time zero and an appointment made for observation at a new time one. The medical model, then, is a crisis-initiated sup- and sub-dyadic relationship in which the fundamental belief in push-causality is mutually reinforced and shared.

It is also possible, when a crucial situation occurs, to attribute it to some grand vortex or scheme of things which ordains that such crises shall befall. For the individual, this ordaining could have occurred at birth, prenatally in the womb, to one's ancestors, or even to oneself in some previous existence. This pull upon events is from outside of the relationship in that it is quite beyond the power of those in that relationship to anticipate that crisis, to ordain it, or to replicate it, if they tried to do so. Ordained crises are not obedient to natural or even probabalistic laws; they are unnatural suspensions of such laws. This answering of any crucial Why in terms of destiny, heredity (as an ordainer of behaviors or events), fate, the will of any divinity, the

decree of any prophet, the inaccessible and usually anonymous designers of any system, or even an unnamed source, such as in the lyrics of "Qué será será," is referred to as pull-causality. Crucial events that are pull-causally perceived tend to be responded to with declarations of moral bankruptcy and manifestations of renewed allegiance to controllers of fate. What Brickman et al (1982) see as the enlightenment model (from the helper's perspective) and Proudfoot and Shaver (1975) see as the religious experience (from the client's perspective) is seen as a belief in pull-causality that is mutually reinforced and shared.

Finally, when a crucial situation occurs, it is possible to attribute it to an eventuation of continuous interactions among those variables that humans attempt to control. In that view, human relationships occur within systems, and those systems are social (and, therefore, not immutable) structures which humans have created and can abolish or revise, and in which the continuous interactions of components can better be controlled. Bateson's (1972) view of human relationships as "mutual simultaneous causal relationships" exemplifies this view of human relationships being continuous and ongoing interactions which yield consequences that are products of those systems that cannot meaningfully be apportioned to the individual components of them. A crisis, in this systemic view, is attributable to interactions that were inadequately controlled. That type of attribution is referred to as relational-causality. As in each of the other causalities, the belief in relational-causality is mutually reinforced and shared. And, as is true of all four causalities, none is refutable from within it. All successes and all failures can be

totally explained from any one of these perspectives.

As more generally defined than by Weiner et al (1972), the four causalities are quite similar to those that were specified earlier by Harvey (1966) and more recently by Maruyama (1981). The most important difference from all of these is the focus on crucial situations, with that focus assumed to be required to indicate--when one is presented with hypothetical states of each relationship--which of the four states of each relationship are more likely to be entered or avoided, rather than how one might account for those less-than-crucial events which are frequently encountered in each state.

As shown in Figure 2, these four causalities array themselves such that the pull- and push-causalities are open to exogeneous interventions, whereas the chance- and relational-causalities are closed. And the pull- and chance-causalities, as types of attribution which tend to maintain the status quo, are morphostatic, whereas the push- and relational-causalities, as types which tend to alter it, are morphogenetic.

With that typology of relationships shown in Figure 1, and that structure of causal attribution shown in Figure 2, research is directed towards: (1) establishing a measure of causal attribution separately in each of the five types of relationships; (2) establishing the validity of that measure in terms of causal attribtuions being significantly different for relationships of each type, and predictably different within each causality between relationships of different types; (3) demonstrating via experiments that effectiveness in each of different types of relationships is predictable from a knowledge of that type of causal attribution which

Figure 2

CAUSAL TYPES FROM A GENERAL SYSTEMS PERSPECTIVE

	OPEN (some important variables are exogenous) (Weiner's stable)	CLOSED (all important variables are endogenous) (Weiner's unstable)
MORPHOSTATIC (deviation-suppressing)		MORPHOGENETIC (deviation-amplifying)
Heinberg's causality:	PULL-causality	RELATIONAL-causality
Weiner's label for test-taking:	ability	effort
lay label for trait:	gifted	stick-to-it-iveness
emotion of success:	blessed	victorious
emotion of failure:	cursed	defeated
epistemological basis:	deities	data
focus:	non-replicable intervention prior to now (time one)	time zero (now) is the beginning of our continuously controlled venturing towards time one
Heinberg's causality:	PUSH-causality	CHANCE-causality
Weiner's label for test-taking:	task difficulty	luck
lay label for trait:	know-how	lucky
emotion of success:	clever	surprised, fortunate
emotion of failure:	stupid	shocked, unfortunate
epistemological basis:	dads	probabilities
focus:	time one (now) differs from time one expected due to replicable intervention at time zero	time zero, time one, etc., are eventuated probabilities, but can be sooner or later than expected

PURPOSES (Weiner's internal)

GOALS (Weiner's external)

should be the best indicator of success in a relationship of each type. It should be noted that the need is for a measure to predict differences within each causality between relationships of different types rather than, as is true of most research in causal attribution, differences between causalities within a relationship of some type.

Establishing the measure of causal attribution in relationships

METHOD

Hypotheses

In generating rationales for the various hypotheses within each causality, extant research seems insufficient to differentiate between monadic and dyadic relationships. Hence, predictions are restricted to between-monadic and among-dyadic differences, and monadic-dyadic differences are excluded.

Between causalities, disregarding types. Although the four causalities may be ranked differently by different cultures (and, indeed, may be an important criterion for constituting the uniqueness of any culture), within any one culture all four causalities will be manifestly different from one another. Hence, disregarding types of relationships:

H_1: Within any one culture the means of the attributions to each of the four causalities will differ significantly from one another.

Within chance-causality. People should tend to see chance-causality as governing crucial events in com-dyads in their coping as one unit

more than as governing such events in other dyads in their coping as two units. And they should tend to see this causality as governing their conceiving of crucial ideas more than as governing their taking of crucial actions. Hence, for chance-causality:

H_2: com-dyads > sup-dyads or sub-dyads;

H_3: C-monads > B-monads.

Within push-causality. Superordinates should tend to see their own push-causal interventions as governing crucial events in their dyads more than should subordinates in those dyads, and such personal contributions should be least apparent to the members of com-dyads. Since prior action is more easily recalled than is prior thought, push-causality should be seen as controlling crucial prior behaviors than as controlling crucial prior thinking. Hence, for push-causality:

H_4: sup-dyads > sub-dyads;

H_5: sub-dyads > com-dyads;

H_6: B-monads > C-monads.

Within pull-causality. Subordinates should tend to perceive themselves as having been assigned pull-causally to those dyads by "the system" more than should superordinates who tend to perceive some control over which subordinates are assigned to them. Members of com-dyads are least likely to see their joining together as exogenously (push- or pull-causally) determined, and as far more endogenously (mostly relational-causally) determined. And people should tend to see their conceiving of crucial ideas more as governed by fate than their taking of crucial actions. Hence, for pull-causality:

H_7: sub-dyads > sup-dyads;

H_8: sup-dayds > com-dyads;

H_9: C-monads > B-monads.

Within relational-causality. This ongoing and reciprocally influencing causality is most apt to be seen as governing crucial events by the members of com-dyads, and more by the subordinate than by the superordinate members of the other types of dyads. And people should tend to see relational-causality more as governing their more overt relationship of taking crucial actions than as governing their more covert relationship of conceiving crucial ideas. Hence, for relational-causality:

H_{10}: com-dyads > sub-dyads;

H_{11}: sub-dyads > sup-dyads;

H_{12}: B-monads > C-monads.

Subjects

The subjects were 82 college undergraduates in two communication courses who provided data anonymously.

Materials

The test for causal attribution was entitled, "Causal Probabilities Survey (CPS)." The entire test appears in the Appendix. Labels have been added to indicate the various relationships (sub-dyadic, B-monadic, etc.) and the causality of each of the 12 items for each relationship (push, pull, rela, chnc). The five crucial situations were created specifically to avoid any classroom learning or test-taking situations, since the dependent variable of subsequent research would refer to performance in

such situations. It was decided to have respondents assign percentages to the 12 items (3 items for each of the 4 causalities) for each relationship rather than, for example, to use a Q-sort, so as to enable each causality to receive the full range from 0 to 100 percent.

RESULTS

A total of 410 distributions of percentages (82 S's x 5 relationships) was obtained. In a few instances the total of the 12 percentages for a particular relationship did not equal exactly 100, and the obtained assignments in those instances were weighted to bring the total to 100.

For the table of means and standard deviations shown in Table 1, the data are ipsative, of course, with respect to row totals, due to the assignment by every S of a total of 100 points, but within each causality across relationships the data are non-ipsative.

The overall F between causalities, disregarding types of relationships, of 30.19 was significant. H_1 is therefore confirmed, although no predictions were made about the rank ordering of the means for this population of U.S. college students. Their relatively low preference for chance-causality (M = 90.52) was expected, but their great preference for relational-causality (M = 179.76) could perhaps be due, at least partly, to quite a few of them being either communication majors or considering such a major and to all of them being in an introductory course in the particular field of communication. As predicted, the four means ranked themselves as significantly different from one another, with relational- > pull-causality (t = 18.87), pull- > push-causality (t = 2.06), and push- > chance-causality (t = 7.02).

Table 1

Table of Sums of Squares for Causalities by Types of Relationships

Relationship	Causality: Chance	Push	Pull	Relational
C-monadic	M = 28.99 S = 22.75	M = 17.30 S = 19.02	M = 19.72 S = 15.93	M = 33.99 S = 23.64
B-monadic	M = 16.68 S = 19.35	M = 25.32 S = 21.57	M = 10.10 S = 14.10	M = 47.84 S = 28.85
Sup-dyadic	M = 11.52 S = 13.07	M = 31.45 S = 23.60	M = 31.67 S = 22.84	M = 25.35 S = 26.72
Sub-dyadic	M = 12.80 S = 14.96	M = 22.48 S = 21.67	M = 40.04 S = 26.57	M = 24.70 S = 19.64
Com-dyadic	M = 20.52 S = 23.51	M = 15.26 S = 17.00	M = 16.34 S = 17.54	M = 47.88 S = 26.90
All	M = 90.52 S = 42.79 N = 410	M = 111.80 S = 43.76 N = 410	M = 117.87 S = 40.18 N = 410	M = 179.76 S = 52.90 N = 410

Since the column means were significantly different from one another, t tests could be applied between relationships within each causality. Of the 11 hypotheses that were tested with one-tailed tests, 10 were significant as predicted. Specifically, within chance-causality: for H_2, $t = 3.01$ for com-dyadic > sup-dyadic and $t = 2.49$ for com-dyadic > sub-dyadic, and for H_3, $t = 3.71$ for C-monadic > B-monadic; within push-causality: for H_4, $t = 2.52$ for sup-dyadic > sub-dyadic, for H_5, $t = 2.36$ for sub-dyadic > com-dyadic, and for H_6, $t = 2.51$ for B-monadic > C-monadic; within pull-causality: for H_7, $t = 2.24$ for sub-dyadic > sup-dyadic, for H_8, $t = 4.79$ for sup-dyadic > com-dyadic, and for H_9, $t = 4.07$ for C-monadic > B-monadic; within relational-causality: for H_{10}, $t = 6.27$ for com-dyadic > sub-dyadic, for H_{11}, $t = -0.18$ (the only non-significant finding) for sub-dyadic > sup-dyadic, and for H_{12}, $t = 3.25$ for B-monadic > C-monadic. In that one instance of non-significance, it seems plausible to suspect inadequate wording of those three relational-causal items for the sub-dyadic relationship to shift the mean of those items closer to the mean of the relational-causal items for the com-dyadic relationship.

The CPS as a predictor of effectiveness in different types of relationships

To assess the ability of the structure of causal attributions to predict performance in relationships of various types, the possibilities, of course, are virtually unlimited. What is reported here are the first efforts that have been made.

The researcher had supervised an interdisciplinary team which had

developed, refined, and tested with hundreds of members of various professional and educational populations a criterion-referenced system[2] to produce--via learners interacting with one another in various roles--consulting skill at an extremely high level. That system consists of cognitive and behavioral criteria to be achieved within approximately one-half of a semester. Students working during and outside of class provided detailed protocol sheets which yielded data about the number of hours each student worked in groups of three to achieve the cognitive and behavioral criteria of that Consulting Learning System (CLS). The fewness in number of hours (the reciprocal of number of hours) each student required to achieve these two criteria are termed cognitive efficiency and behavioral efficiency.

No student was allowed to work in any group of three with either of the other two on two occasions while striving for that criterion (cognitive or behavioral). In the hours spent to achieve the cognitive criterion, the relationship of the three members of each group was com-dyadic. On the other hand, in the hours spent to achieve the behavioral criterion, the relationship of two of the three was superordinate and subordinate, with the third as an evaluator, and each member spent one-third of the time in each group in each role. Hence, the type of relationship can be considered to be sub-dyadic, sup-dyadic, or the sum of both (sub sup-dyadic). The cognitive and behavioral criteria were both goals to be achieved: a required level of proficiency, regardless of the number of hours spent to achieve it. The best predictors of each criterion are therefore assumed to be: for cognitive efficiency, com-dyadic goaling

scores; for behavioral efficiency, sub-dyadic goaling, sup-dyadic goaling, and sub+sup-dyadic goaling scores.

Any one of the six levels of skill could be achieved by the date on which all work on the CLS was concluded, with that level being the number (up to 5) of totally successful consultations with different clients under the supervision of different evaluators. Whereas the cognitive and behavioral efficiency criteria were fixed levels of performance to be achieved, regardless of the time required, and are therefore perceived as goals to be achieved, for skill level the time is fixed and one's purpose is to attain increasingly higher plateaus of performance within the time allotted, so long as the time allotted is not abundant. (Three of 34 reached the highest level, and all required a considerable amount of time outside of class.) And the relationship is between students in the roles of superordinates and subordinates as evaluators of the performances of one another with complementary purposes to be attained. Hence, this dependent variable of CLS Maximum Skill Level is assumed to be predicted best from a knowledge of students' sub-dyadic, sup-ddyadic, and sub+sup-dyadic purposing scores.

Most of the remainder of the course consisted of the Sales Learning System (SLS) in which students developed and then proffered unique services to be rendered to prospective clients throughout long-lived relationships. Students' grades on each round were based on the ranks they received from prospective clients who ranked the five services that each was proffered. Those letter grades for each of the three rounds of the SLS were averaged

to obtain the SLS Average Grade. That SLS criterion is seen as the same as the CLS Maximum Skill Level criterion (a sub- and sup-dyadic purposing relationship) except that, on each round, the goal is to form a com-dyadic relationship. Hence, SLS Average Grade is assumed to be predicted best from the same causality scores as for the CLS Maximum Skill Level, but to be even better predicted with the addition of com-dyadic goaling scores.

In Table 2 are the results obtained from these predictions. Those correlation coefficients which were predicted to be significant are in boldface boxes, with the other entries in the matrix being provided for comparison. It can be seen that, of the 11 predictions, 9 were significant as predicted. The r of .273 not quite high enough, and the r of .217 is quite wide of the mark, but both are in the direction that was predicted.

For all but cognitive efficiency, multiple regressions were computed to see if the squared beta values consistently favored the superordinate or the subordinate relationship as the better predictor of all of the three measures of communicative effectiveness, and, for the SLS criterion, the extent to which com-dyadic goaling scores ehanced the predictability of that criterion.

For behavioral efficiency, the multiple R of .473 was exactly equal to r of .473 for the sum of the sup- and sub-dyadic scores, and, not surprisingly, the squared beta weights for sub-goal and sup-goal scores indicate that the two, respectively, contribute 48 and 52 percent to the total predictability. For the CLS Maximum Skill Level criterion, the multiple R of .433 is somewhat higher than the r of .414 for the sum of both, and the squared betas indicate that the sup-dyadic scores contribute 72 percent of the total predictability and the sub-dyadic scores only 28

Table 2

Predicted Relationships (In Boxes) Between

Causal Attributions and Communication Effectiveness

Measure of Communication Effect'ness	Sub-goal	Sup-goal	Sub-goal + Sup-goal	Sub-purpose	Sup-purpose	Sub- + Sup-purpose	com-dyadic push-causality	com-dyadic chance-causality	com-dyadic goal
Cognitive Efficiency	.264 (p = .13)	-.195 (p = .27)	.037 (p = .83)	-.264 (p = .13)	.195 (p = .27)	-.037 (p = .83)	.237 (p = .18)	,261 (p = .14)	.358 (p = .04)
Behavioral Efficiency	.384 (p = .03)	.397 (p = .02)	.473 (p = .005)	-.384 (p = .03)	-.397 (p = .02)	-.473 (p = .005)	-.034 (p = ,85)	.017 (p = .92)	-.003 (p = ,99)
CLS Maximum Skill Level	-.413 (p = .02)	-.273 (p = .12)	-.414 (p = .02)	.413 (p = .02)	.273 (p = .12)	.414 (p = .02)	.032 (p = .88)	-.181 (p = .31)	-.145 (p = .41)
SLS Average Grade	-.386 (p = ..02)	-.422 (p = .01)	-.490 (p = .003)	.386 (p = .02)	.422 (p = .01)	.490 (p = .003)	.082 (p = .64)	.195 (p = .27)	.217 (p = .22)

percent. This too is not surprising, in that the criterion is earned in the role of superordinate, while performance is in both. For the SLS Average Grade criterion, the multiple R is considerably higher than any r, being .594. And the squared beta values indicate almost one-half of the predictability coming from the com-dyadic goaling scores (49 percent), and the sub-dyadic purposing and sup-dyadic purposing scores contributing the remainder almost equally (24 and 27 percent, respectively).

Two important weaknesses of this research which need to be repaired for future research are that the CPS was an unrefined instrument and the relationships were obtained from the classroom instead of having been created in a laboratory setting. But the fact that performance in four different kinds of relationships could be significantly predicted with an instrument so unrefined surely warrants the use of such an instrument as a predictor of human performance in relationships of all kinds. And, perhaps equally important, a causal perspective has been used to refer to each of the four causalities alone, or to any dimensional combination, such as the morphostatic, morphogenetic, goaling, purposing, open, or closed dimension for any single relationship of combination of them (such as the sub- and sup-dyadic types), and the structure of causal attributions can be revealed more clearly by creating relationships quite purely and predicting the perspectives of different levels of performers in a relationship of each type. And, whether predicting performance from perspectives or vice versa, the CPS should be improved, such as by tripling its length, and then performing item analyses for each of the 20 tests.

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FOOTNOTES

[1]Welden (1983) provides a structure that refers to this type of relationship of humans. The com-dyadic relationship is the only one of the five types which is seen as structured thus.

[2]The Consulting Kit, complete with all rules and materials, is available from the University of Hawaii Campus Bookstore, 2465 Campus Road, Honolulu, Hawaii.

CAUSAL PROBABILITIES SURVEY

_____
Last name First name

On the following pages are five different situations. You are asked to imagine yourself in each situation, and then consider how you might tend to respond to anyone who asks you how you ever got into that particular predicament.

Please consider each possible explanation, and assign a probability of your responding with that explanation anywhere from 0 percent up to 100 percent. However, the total of all of your probabilities should add up to 100 percent. If there is no probability whatsoever in your mind that you would respond with that particular explanation, enter a zero in the percent column in front of that explanation. And you can use fractions. For example, if you have already assigned 85 percent to other items, and two of them seem equally likely, put 7 1/2 in the percent column for each of those two items so that the total for all items is exactly 100 percent.

(SUB-DYADIC) I have been employed for two years by this company. I like my job and I assumed that they were generally satisfied with my work. Like most people, my boss and I occasionally had a few disagreements, but I was never stubborn or nasty when we disagreed. Last week they notified me and two others that we were no longer needed.

I would distribute 100 percent of the blame as follows for my being laid off:

		percent	
(PULL)	A.	_____	The company is probably headed for eventual bankruptcy, and I am one of its earliest losses.
(CHNC)	B.	_____	When everybody works under a lot of pressure, you're bound to have a bad day now and then; so, if I had called in sick that day, they probably would have laid off someone else.
(RELA)	C.	_____	My boss and I never discussed what the specific goals and performance objectives for my job were.
(PUSH)	D.	_____	I didn't work as hard or as well as they expected.
(PUSH)	E.	_____	My boss was an almost imposssible person to work for, and it's amazing that I lasted as long as I did.
(RELA)	F.	_____	There was not a good match-up between my particular abilities and skills and the abilities and skills that the job required.
(CHNC)	G.	_____	It was sort of a quirk, like the president's nephew was qualified for that job and they had to get me out to get him in.
(RELA)	H.	_____	They did me a favor by laying me off because it will eventually prove to be the best thing, both for me and for that company.
(CHNC)	I.	_____	There is always turnover in any company, and this time it was my personnel folder that got pulled.
(PULL)	J.	_____	The intense pressure of the working conditions in that company are such that many people quit or get fired, and it finally caught up with me.
(PUSH)	K.	_____	My boss was more offended by my disagreeing than I had suspected.
(PULL)	L.	_____	The needs of that company are constantly changing, and I was in a division that will eventually be phased out or drastically scaled down.
		_____	
		100%	TOTAL

(B-MONADIC) I fly to a large city and rent a car. I am driving along the highway and the engine suddenly goes very fast. My speed hits 90 and I almost run off the road before I realize that I can turn off the ignition and stop the car.

I would distribute 100 percent of the blame as follows for this nearly fatal incident:

		percent	
(PUSH)	A.	_____	I never learned which cars will cause the engines to race if the accelerator rod comes loose.
(RELA)	B.	_____	I never insisted on being trained to deal effectively with emergencies such as this one.
(PULL)	C.	_____	The state fails to require everyone to demonstrate on a simulator how to cope with emergencies in order to get a driver's license.
(RELA)	D.	_____	I had never been in this kind of a predicament before, so I never had a chance to expect such a weird thing could ever happen to me.
(CHNC)	E.	_____	They rented me this particular car of all of the cars that were available.
(PUSH)	F.	_____	The rental agency does not periodically check the throttle linkage on every car.
(PULL)	G.	_____	The federal government does not require car manufacturers to design fuel controls so that this could never happen.
(PUSH)	H.	_____	I preferred a rented car to some other means of transportation.
(CHNC)	I.	_____	This car got stuck with me at the controls instead of a more experienced driver on this occasion.
(PULL)	J.	_____	The city did not create a mass transit system that was able to get me where I wanted to go cheaper and faster.
(CHNC)	K.	_____	I was in the wrong place at the wrong time.
(RELA)	L.	_____	I never considered the kinds of things that can happen to cars and what I should do in case each kind of thing should happen.
		_____	
		100%	TOTAL

(SUP-DYADIC) I have two children, a 7-year-old son and a 5-year-old son, both of whom are healthy and perfectly normal in every way. I have only spanked either one of them a few times in their lives, and never hard enough to hurt them severely. This time, however, I gave the 5-year-old a spanking that he will long remember.

I would distribute 100 percent of the blame as follows for my having to do this:

		percent	
(RELA)	A.	_____	I have not had enough training in skilled parenting to know how to cope with his continual testing of me.
(PULL)	B.	_____	He was promised a severe spanking if he ever did that again, and I had to follow through on what was promised.
(PUSH)	C.	_____	He did something so horrible that I don't even want to consider the possibility that he might ever do it again.
(CHNC)	D.	_____	The two kids are always arguing and fighting with my refereeing, so it was just the 5-year-old's turn to get a spanking.
(RELA)	E.	_____	I never trained my sons to talk with me about the kinds of things that they might do or try to do, and what I would do in case one of them did such and such.
(CHNC)	F.	_____	I believe that occasional and deserved punishment prepares children to grow up to be healthy and independent in a world that punishes everybody now and then.
(PUSH)	G.	_____	My nerves were so on edge by their continual wrangling that I was driven to spank him harder than perhaps I should have.
(PULL)	H.	_____	His behavior on this occasion was so deserving of a spanking that almost any parent would have done what I did.
(RELA)	I.	_____	I did not sufficiently explore all of the kinds of punishments parents can provide, at least one of which might have proved to be more effective.
(CHNC)	J.	_____	He probably had gotten away with the same thing several times before, and this was one time that he got caught.
(PUSH)	K.	_____	If he hadn't almost dared me to spank him, I probably would have punished him some other way.
(PULL)	L.	_____	Parents are legally responsible for the behavior of their children, and spankings that fall far short of being child abuse are properly administered on those few occasions that require them.
		_____	
		100%	TOTAL

(COM-DYADIC) My best friend and I have known each other very well for several years. I heard from a gossiping person who knows us both that my friend has a serious illness. When I asked about it, my friend told me a lie and claimed to be in the best of health. And then my friend went into the hospital less than two weeks later.

I would distribute 100 percent of the blame as follows for my friend telling me a lie:

		percent	
(RELA)	A.	_____	My friend, knowing that I would be very upset, was trying to spare my feelings.
(PULL)	B	_____	The world is full of liars and, like everyone else on earth, my friend is not truthful at all times.
(PUSH)	C	_____	The gossip probably just saw signs of illness in my friend and concluded that my friend was ill.
(RELA)	D	_____	My friend, knowing that I might not be able to keep it a secret, decided not to tell me.
(CHNC)	E.	_____	My friend told me the truth, but it just so happened that the illness came soon after the gossip.
(PUSH)	F.	_____	The gossip probably tricked my friend into telling the gossip about the illness, without wanting anyone at all to know.
(PULL)	G.	_____	In certain social situations such as this one, it is not usually better to tell the unsolicited and naked truth, even to one's friends.
(CHNC)	H.	_____	Having gossips telling lies and people going into hospitals, this kind of thing probably happens thousands of times a week and the two things aren't related.
(PUSH)	I.	_____	My friend probably found out about being ill just before meeting the gossip, and was weak enough at that moment to reveal what was intended to be a secret from everyone.
(RELA)	J.	_____	I hate hospitals and sick people, and my friend probably couldn't find the time and way to break the bad news to me.
(PULL)	K.	_____	In friendships we sometimes test one another to see if the friendships can survive the tests.
(CHNC)	L.	_____	The illness that sent my friend to the hospital must be such a sudden thing that the chances are that no one could predict it two weeks in advance.
		_____	
		100%	TOTAL

(C-MONADIC) Most of the time I am happy or at ease, even if I am not on top of the world. But sometimes I feel very blue and down, and I can brood for hours. I would distribute 100 percent of the blame as follows for my blue spells:

(CHNC) A. _____ Being up or down just plain happens to everyone now and then as a natural part of living.

(PULL) B. _____ I tend to look on the dark side of things, to look for flaws, to be suspicious when good things happen.

(RELA) C. _____ Only things happen, not bad or good things and, when I am blue, that is what I am doing to myself rather than what life is doing to me.

(CHNC) D. _____ People probably just take turns being up or down, like that's the way the ball bounces and, when I'm blue, then it's just my turn.

(PUSH) E. _____ If I get blue, you can bet that somebody did something so horrible to me that I'm at a loss to figure out any good way to get even.

(PUSH) F. _____ When I feel blue, it's because something awful has happened, like the death of the president or somebody that I've known for many years, and I couldn't do a thing.

(RELA) G. _____ Things start to build in me, like a little thing that I do wrong, and my thinking about it makes it worse, so I stew about it more, and it gets worse and worse.

(PULL) H. _____ I get so emotionally involved with my own problems that I tend to take it out on myself instead of dealing with the problems.

(CHNC) I. _____ It just seems to happen when I wake up each morning, and I just know whether that day is going to be a good day or a bad day for me.

(PUSH) J. _____ Whenever I'm blue, it's probably because I haven't been eating right or getting enough rest or something like that.

(PULL) K. _____ Sometimes being blue is the price one has to pay for sometimes being happy.

(RELA) L. _____ Sometimes I don't pay enough attention to what I'm doing and, before I notice, things have gotten out of hand so badly that I know I have to think it through all over and I just don't want to make the effort.

_____

100% TOTAL